National Law Enforcement and Corrections Technology Center Rocky Mountain Division Pre-Conference Workshops Monday and Tuesday, September 5 - 6, 2005

9:00 am - 4:30 pm **Crime Mapping with ArcGIS 9.x** ***Savannah State University***

Presenters

NLECTC - RM, CMAP Instructors

This two day introductory course introduces the concepts of crime mapping, demonstrates the relationship between crime mapping and crime analysis, and presents many of the technical issues of implementation that are encountered in beginning a crime mapping effort. Students receive training on the following topics: basemaps, geocoding, pin (point symbol) mapping, pattern analysis, choropleth mapping, and buffer analysis.

9:00 am - 4:30 pm **Crime Series Analysis and Spatial Statistics with ArcGIS 9.x** ***Savannah State University***

Presenters

NLECTC - RM, CMAP Instructors

This two day advanced class focuses on the analysis and resolution of crime series using a variety of intermediate and advanced functions in ArcGIS 9 in conjunction with CMAP's CASE (Crime Analysis Spatial Extension). Students already familiar with ArcGIS 9 will advance their use of spatial analysis and spatial statistics to perform such functions and techniques as point pattern analysis, density-based field analysis and distance-decay field analysis, spatiotemporal integration, and movement-based event forecasting. The advanced class is offered for those who have substantial experience using the software program and are interested in learning more in-depth techniques to apply to tactical crime analysis.

Wednesday, September 7, 2005

10:00 am - 4:00 pm — **Registration** — *Pre-Function Area*

11:00 am - 4:00 pm — **Vendor Exhibits** — *Pre-Function Area*

1:00 pm - 1:30 pm — **Welcome** — *Grand Ballroom ABC*

NIJ Director — **National Institute of Justice**

1:30 pm - 2:15 pm — **Keynote Address**

Lisa Godbey Wood — **U.S. Attorney, Southern District of Georgia**

2:15 pm - 3:00 pm — **Opening Remarks**

Presenters

Thomas E. Feucht — **Assistant NIJ Director for Research and Evaluation**

John S. Morgan — **Assistant NIJ Director for Science and Technology**

Ronald E. Wilson — **MAPS Program**

3:00 pm - 3:30 pm — **Break**

3:30 pm - 5:00 pm — **Workshops**

Conceptual Data Modeling: Concepts and Techniques

Convention Center #202

Intermediate

Presenter

Albert K. Yeung — **Ontario Police College**

Conceptual Data Modeling: Concepts and Techniques

This workshop introduces current methods of conceptualizing data in the context of best practices that emphasize developer-user interaction in systems design and process development. Conceptual data modeling helps systems developers understand the needs of end users, the business problems the system aims to solve, and the data required to solve the

problems. Experience has shown that GIS projects often fail not because of the lack of technology, but because they lack conceptual understanding from both the developers' and users' perspectives. The session explains the purposes and procedure of conceptual data modeling and its relationship with other phases of GIS design and implementation. The objective is to give participants basic understanding of conceptual data modeling, so they can actively participate in and contribute to GIS implementation projects in their organizations.

Exploring the Enhanced NCJRS Web Site and New Developments in Search Services

Convention Center #203

General Audience

Presenter

James Fort — **National Criminal Justice Reference Service**

Exploring the Enhanced NCJRS Web Site and New Developments in Search Services
This workshop, designed for all audiences, will introduce attendees to the new features of the enhanced National Criminal Justice Reference Service (NCJRS) Web site and explore the latest in Web searching developments. Attendees will learn how to navigate the NCJRS Virtual Library of more than 7,000 documents, conduct simple and complex searches of NCJRS and other Federal Web resources, sort results sets, access online and order hard copy materials 24-hours-a-day, search the NCJRS Abstracts Database of more than 180,000 documents, and navigate the NCJRS Calendar of Events. Additionally, this workshop provides an overview of the latest developments in desktop searching, toolbars, and specialized search services.

Introduction to GIS

Convention Center #204

Beginning

Presenter

Jay Lee — **Kent State University**

Introduction to Geographic Information Systems
This workshop provides an overview of GIS with discussion and demonstrations covering data, functions, and management. For GIS data, presenters will discuss data models, creation, capture, management, and quality assessment. For GIS functions, the workshop covers mapping with GIS and related data, analysis of GIS data, and modeling of information describing geographic phenomena. For GIS management, the workshop will discuss issues in operation, development, and budgeting.

Mapping Crime: Understanding Hot Spots

Convention Center #205

General Audience

Presenter

Katie M. Filbert — **MAPS Program**

Mapping Crime: Understanding Hot Spots

This workshop is based on the upcoming NIJ publication, *Mapping Crime: Understanding Hot Spots*, which builds on the introductory guide to crime mapping, *Mapping Crime: Principle and Practice*, by Keith Harries. This workshop introduces fundamental criminology concepts behind crime mapping and hot spot analysis, as well as various techniques and tools used to map and analyze hot spots. These include thematic mapping and kernel density mapping, using ArcView and Spatial Analyst, as well as basic spatial statistics and spatial data analysis, using CrimeStat and GeoDa. The goal is to take crime mapping and hot spot analysis to the next level, from identifying where crime hot spots are to more in-depth understanding of crime problems.

Role of GIS and Institutionalization of Analysis in Police Departments

Grand Ballroom D

General Audience

Presenter

Rachel Boba — **Florida Atlantic University**

Role of GIS and Institutionalization of Analysis in Police Departments

This workshop discusses a model for the institutionalization of analysis at all levels in a police agency, including the analysis of repeat incidents, patterns, and problems. It focuses on the central role that GIS plays in this process and ends with a discussion of the evaluation results for this model, as implemented in the Port St. Lucie, Florida, Police Department, with the assistance of a grant from the Office of Community Oriented Policing Services.

Tools and Tricks for Effective Spatial Analysis Rate Maps

Grand Ballroom E

Intermediate

Presenter

Michael Barndt — **Nonprofit Center of Milwaukee**

Tools and Tricks for Effective Spatial Analysis Rate Maps

Although hot spot maps are very useful in managing crime, rate maps are often more useful for analysis. A rate of vandalism to population may reveal low population areas with high rates. Or a rate of prisoner reentries with drug problems to all reentries will target neighborhoods for specific programs. A density map would not reveal these patterns. Rate maps require several steps: creation of two density maps, calculation of a rate grid, and creation of a "mask" where the rates are not reliable. When population-based rates are used, additional steps are required to reconcile address-based data sources with block-based demographics.

Using GIS in Problem Analysis

Grand Ballroom F

General Audience

Presenter

Joe Ryan **Police Foundation**

Using GIS in Problem Analysis

This workshop will explore problem analysis, explain the role of GIS in problem analysis, and show that by using GIS correctly throughout the SARA model, public safety agencies can enhance their ability to understand and deal with community crime problems. The workshop will use a variety of hardcopy or computer exercises. Participants will work through the entire SARA process, based on a particular crime problem. Participants should have some basic knowledge of GIS and its capabilities and a general idea of criminological theory, research methods, and statistics.

Thursday, September 8, 2005

7:00 am - 4:00 pm **Registration and Continental Breakfast** ***Pre-Function Area***

7:30 am - 4:00 pm **Vendor Exhibits** ***Pre-Function Area***

8:00 am - 11:15 am **Workshops**

Basics of Cartography

Convention Center #202

Beginning

Presenter

James L. LeBeau — **Southern Illinois University at Carbondale**

Basics of Cartography

The growth of automated mapping in criminal justice has been phenomenal. During the rush to get going with mapping, new users have focused on the technology of making maps while ignoring the science and art of making a map. This serious oversight limits the efficiency, effectiveness, and in some instances, credibility of crime mapping. This workshop is a discussion and illustration of the important basics of cartography. Topics include the elements of a map, generalization and scale, coordinate systems, visualizing different data scales, symbols and visual variables, color design, map layout, and different types of thematic maps.

Crime Mapping for Managers

Convention Center #203

General Audience

Presenter

Noah J. Fritz — **National Law Enforcement and Corrections Technology Center - Rocky Mountain**

Crime Mapping for Managers

Chiefs of Police, Commanders, and Captains within law enforcement and corrections agencies are turning to crime and intelligence analysis in order to make better-informed decisions regarding tactical, strategic, and administrative crime analysis. This session covers what mid- and upper-level managers need to know about crime mapping and crime/intelligence analysis.

Crime Travel Demand Modeling: Theory, Implementation, and Uses

Convention Center #204

Advanced

Presenter

Ned Levine — **Ned Levine & Associates**

Crime Travel Demand Modeling: Theory, Implementation, and Uses

This workshop will explain the basics of crime demand modeling. Crime travel demand theory attempts to model crime travel over an entire jurisdiction or metropolitan area. There is a data collection step and four modeling steps—trip generation, trip distribution, mode split, and network assignment. Once calibrated, the model can be used to examine policy and policing interventions. The workshop will go through each of these steps, illustrating them with data from Baltimore County. The use of crime travel demand modeling for policy and policing scenarios will be illustrated using CrimeStat III.

Environmental Criminology, Problem-Oriented Policing, and Crime Mapping

Convention Center #205

General Audience

Presenters

Mangai Natarajan — **John Jay College of Criminal Justice**
and
Ronald V. Clarke — **Rutgers University**

Environmental Criminology, Problem-Oriented Policing, and Crime Mapping

(Mangai Natarajan, Ronald V. Clarke)

Crime analysts are increasingly called upon to use their crime mapping and GIS skills to support problem-oriented policing projects. But many new analysts lack knowledge of environmental criminology that would help them to make their full contribution. These concepts include the problem analysis triangle, the journey to crime, repeat victimization, risky facilities, crime facilitators, displacement, and diffusion of benefits. The workshop will show how mapping can use these concepts to support problem-oriented policing projects. It will make use of *Crime Analysis for Problem Solvers*, a manual published by the COPS Office during the summer of 2005.

Introduction to Spatial Data Analysis With GeoDa

Grand Ballroom D

Intermediate

Presenter

Julia Koschinsky — **University of Illinois at Urbana-Champaign**

Introduction to Spatial Data Analysis With GeoDa

This workshop will introduce crime analysts to the spatial analysis capacity of a new free software program called GeoDa. The workshop will review methodological issues and will illustrate how to carry out Exploratory Spatial Data Analysis (ESDA) with GeoDa in the

context of lattice data, i.e., point and polygon data (not including events). Specifically, the workshop provides an overview of GeoDa's functionality, including the following topics: geovisualization, mapping, and exploratory data analysis; mapping and smoothing of rates; spatial autocorrelation basics; extensions of spatial autocorrelation (local and global, bivariate); and spatial regression basics.

Open Source GIS and Spatial Data Analysis Software and Tools

Grand Ballroom E

Intermediate

Presenter

Jason Dalton — **Spatial Data Analytics Corporation**

Open Source GIS and Advanced Spatial Data Analysis Tools

In the world of GIS software, free tools that can help streamline crime analysis work are created every day by dedicated software developers. This workshop will introduce the audience to several software packages that are freely available, such as GRASS, PostGIS, and R with GeoR. The primary focus will be on the use of R and GeoR – programmable spatial statistics tools for the advanced user. OpenEV will be discussed in regard to importing files into PostGIS, GRASS, and R. Rather than typical "share-ware" or throwaway programs, the applications discussed are surprisingly robust and are used throughout the world for business and government applications.

Using Spatial Statistics for Crime Analysis

Grand Ballroom F

Intermediate

Presenter

Lauren M. Scott — **Environmental Systems Research Institute**

Using Spatial Statistics for Crime Analysis

With growing availability of detailed street-level geographic data, implementation of increasingly digital crime monitoring and incident reporting systems, and better access to higher quality, lower-cost desktop computer mapping software, more and more police departments are taking advantage of GIS technology for crime pattern analysis, police resource allocation assessment, and emergency call response monitoring. This workshop provides an introduction to the new spatial statistics available with ArcGIS 9, and describes how they might be used to assist crime analysts. Three potential application areas are presented: (1) Analyzing Hot Spots (2) Assessing Risk, and (3) Looking for Clues in Spatial Relationships.

11:15 am - 1:30 pm — **Lunch on Your Own**

1:30 pm - 5:00 pm **Concurrent Panels**

Incident Commander: A No-Cost Software Simulation for Critical Incident Management Training

Convention Center #202

General Audience

Presenter

Cathleen A. Strabala — **National Law Enforcement and Corrections Technology Center - Northwest**

Incident Commander: A No-Cost Software Simulation for Critical Incident Management Training

Incident Commander is a PC-based no-cost software simulation for critical incident training. This tool was developed for the National Institute of Justice (NIJ/OST) through a public private partnership with BreakAway, Ltd., an experienced gaming company. The purpose of Incident Commander is to help first responders and others plan in advance for the challenges they will encounter, particularly in the areas of communication, asset allocation, and advance planning. This session will provide training in the use of the software as a "sim-player" and an introduction to the use of the scenario design tools to configure the simulation to match participants' own jurisdiction.

1:30 pm - 3:00 pm **Concurrent Panels**

Corrections, Parole, Probation I

Convention Center #205

General Audience

Moderator

Andrew L. Goldberg — **National Institute of Justice**

Presenters

Melissa R. Johnson — **New Jersey Department of Corrections**

Using Prison Gang Intelligence on the Streets

In November 2004, the New Jersey Department of Corrections (NJDOC) had identified more than 9,000 inmates as gang members in their database. Almost half of the identified inmates have returned to the community. For this reason, NJDOC has shared prison gang intelligence with outside law enforcement agencies for years. To better display the gang activity trends throughout New Jersey, the Department has begun to map prison and community gang intelligence. Presentations are compiled to highlight areas affected with gang graffiti, increased gang activity, intelligence from the street, and locations of last-known addresses of identified gang inmates. This combination of street and prison intelligence is displayed to law enforcement during training or task force initiatives.

Mapping prison gang intelligence has proven useful to outside law enforcement because the data outlines geographic areas in a town, county, or state that need gang suppression or prevention tactics.

Nancy G. La Vigne **The Urban Institute**

"It's the Data, Stupid!" Overcoming Challenges and Developing Strategies for Mapping Corrections Data

This presentation presents lessons learned from 12 Reentry Mapping Network sites with regard to collecting, analyzing, and mapping corrections data to help inform prisoner reentry efforts. Obstacles associated with data access and reliability are addressed, along with recent findings on the residential mobility of released prisoners and the extent to which a prisoner's address at the time of his or her release is an accurate proxy for where he or she ends up residing over the long term. The presentation concludes with a series of strategies one can employ to improve the reliability of corrections data.

Julie Wartell **San Diego District Attorney's Office**

Offender Reentry in San Diego: The Who, What, and Where

(Julie Wartell, Dave Lindsay)

This presentation focuses on San Diego's Reentry Mapping Network project. San Diego, one of 12 Urban Institute sites nationwide, is conducting neighborhood-level analyses of released offenders reentering communities, in order to better understand the issues and work in collaboration for community change. The project team, spearheaded by the District Attorney's Office, has examined patterns and trends related to the offender populations coming out of federal and state prison as well as county jail. In addition, the team mapped and analyzed community assets in order to identify gaps and make recommendations.

Crime Forecasting

Convention Center #203

Intermediate

Moderator

Derek J. Paulsen **Eastern Kentucky University**

Presenters

Fraser Moffatt **Canada Border Services Agency**

Crime Potential Modeling: A GIS-Based Method Using Weights-of-Evidence

This research project was undertaken to evaluate the utility, effectiveness, and accuracy of the GIS-based weights of evidence prediction model for the spatial prediction of residential break and enter crime in the city of Ottawa. The data-driven predictive weights of evidence (WofE) model was applied against six specific land uses of the urban environment as identified in the environmental criminology literature, including known occurrences of break and enters, in order to generate maps that could identify where future occurrences of residential break and enter might be located. Using the Arc-WofE extension written for the ArcView 3.2 GIS software package, a series of "crime potential maps" were generated that

successfully identified small areas of high potential, in the order of 60 to 95 percent probability, and were successful in placing future break and enter occurrences in these areas of high potential.

Wilpen L. Gorr **Carnegie Mellon University**

Crime Forecasting for Police Deployment: Results From a Large Scale Research Program

(Wilpen L. Gorr, Jacqueline Cohen)

The project's goal has been to see if crime forecasts can be used for police deployment purposes. Researchers employed the best models and experimental designs that criminology and the forecasting field have to offer, using 12 years' data from two medium-sized cities. Results for total serious violent crimes, at the car-beat level and one month ahead, are promising: 40 to 50 percent of the large change forecasts are correct, compared to a base rate of 10 percent expected by chance alone. The results for total serious property crimes are less promising in terms of large changes, but very good for crime level control, based on seasonality.

Derek J. Paulsen **Eastern Kentucky University**

Target Profiling: Attempting to Predict Commercial Robbery Victimization Using Spatial Modeling

While the prediction of future crime events has been a goal among some criminologists and crime analysts for many years, research has thus far been largely unable to accurately predict crime victimization on anything but the most general of scales. However some crimes, such as commercial structure crimes (robbery, arson, and burglary) are potentially more predictable because of the stability of victim locations. Specifically, due to the limited and stable opportunity structure of commercial structure related crimes, it is possible to know the exact location of all potential victims within a community at a given time, allowing for more accurate prediction of potential victimization. This presentation discusses a new methodology for predicting these types of victimization called Opportunity Structure Predictive Modeling (OPSM). Using a combination of neighborhood and individual level crime-related measures, OPSM attempts to predict the likelihood of commercial structure crime victimization for all commercial structures within a community. In addition to a discussion of the theoretical model, results of a pilot project will be discussed.

Crime Mapping and Analysis

Convention Center #204

General Audience

Moderator

Jerry Ratcliffe — **Temple University**

Presenters

Joel M. Caplan — **University of Pennsylvania**

Cartographic Modeling Laboratory

The Cartographic Modeling Lab (CML) at the University of Pennsylvania works with the Philadelphia Police Department (PPD) to distribute aggregate crime data to the public through a web-based mapping application. This presentation will provide an overview of the functionality in this CrimeBase product, including the ability to chart trends over time, define your own neighborhood boundaries, and export maps and data. It will also describe the ways the CML is using the PPD data to support academic research on neighborhood effects and gun violence, social disorganization, obesity, physical activity, and urban heat islands.

Dan Helms — **National Law Enforcement and Corrections Technology Center - Rocky Mountain**

Police Geocoding: A Dot in a House of Cards

All crime mapping depends upon accurate and reliable spatial locations; for most analysts, these locations are determined by the address matching geocoding process. Unfortunately, few analysts and mappers thoroughly understand the complexities of this intricate, many-stage process; and they rely on their software to do the right thing. This presentation explains the complete logical process of address matching and the type of geocoding most commonly used in law enforcement. Complete mastery of this process is a necessary prerequisite to any crime mapping or spatial analysis, since the usefulness of such analysis is absolutely dependent on the accuracy of the underlying spatial locations.

Jerry Ratcliffe — **Temple University**

10 Techniques in 20 Minutes: Mapping Temporal Changes in Crime

"So is crime on the way up?" Problem oriented policing and intelligence-led policing strategies often require police to identify emerging crime and disorder hot spots. A thorough problem-oriented approach also requires an evaluation of the solution employed. These require the crime mapper to be able to map the crime change from one time to another, yet many crime analysts often produce temporally static maps that merely show the crime distribution from month to month. This presentation aims to whet the appetite of crime mappers by demonstrating and evaluating ten different ways to map changing crime patterns over time.

Geography of Crime I (Drugs and Crime) *Grand Ballroom D*

General Audience

Moderator

KiDeuk Kim **State University of New York at Albany**

Presenters

Kristen M. Mikelbank **Case Western Reserve University**

Use of GIS and Spatial Analysis in Responding to Community Concerns About Local Drug Markets

(Kristen M. Mikelbank, William J. Sabol)

This research uses the Cleveland Police Department's drug arrest data from 1990 to 2001 to demonstrate three ways that GIS can be utilized in crime mapping. First, basic GIS functions were used to address community concerns about drug offenders and where they resided. Second, GIS was combined with spatial analysis techniques to explore citywide patterns of drug crimes. Third, these techniques were linked with diffusion theories to examine how drug crimes moved throughout the city. Results from this analysis, when combined with the actions of concerned residents, community groups, and police, can be used to improve neighborhood safety.

Piyusha Singh **State University of New York at Albany**

Drug Market Displacement in Response to Police Interventions: Using GIS to Explore Alternative Models of Spatial Displacement

This research uses Geographic Information Systems and spatial analysis to examine the differences between various models of spatial displacement of criminal activity. Research thus far has focused on the "distance decay" model of spatial displacement, which expects spatial displacement to occur close to the areas being targeted. However, criminal activity may displace to areas that are characteristically similar rather than close by. When alternate models of spatial displacement are compared, results look more like evidence of diffusion of benefit, rather than displacement effects.

KiDeuk Kim **State University of New York at Albany**

Stochastic Modeling of Illicit Drug Distribution: An Analysis of the Unified Drug Intelligence System Data

(KiDeuk Kim, RyangHui Kim)

The Unified Drug Intelligence System (UDIS) collects information on suspected drugs submitted to forensic laboratories across New York state. This research attempts to understand the overall patterns of illicit drug distribution across New York by analyzing the UDIS data at city, town, or county levels. An understanding of the quantity and type of illicit drugs seized in a given location at a particular time can provide useful intelligence for law enforcement agencies. In order to generate risk maps for illicit drugs, a non-parametrical geostatistical methodology was implemented in this study. For unsampled locations, Indicator Kriging (IK) procedures were undertaken to build a probabilistic model of illicit drug distribution.

Spatial Data Analysis I

Grand Ballroom E

Intermediate

Moderator

Edwin W. Zedlewski — **National Institute of Justice**

Presenters

Katrina Baum — **Bureau of Justice Statistics**

Concepts in Crime and Spatial Statistics

The best linear unbiased estimator (BLUE) assumption of ordinary least squares (OLS) regression is violated when the independent and dependent variables in the model are correlated. Criminal events are typically influenced by geographical and environment factors that result in a clustered distribution. This paper serves as an introduction for presentations covering spatial statistics for exploratory mapping and resources for spatial thinking. The discussion explains concepts such as spatial autocorrelation, the k-function as one test for clustering, and the spatial autoregressive (SAR) model.

Donald G. Janelle — **University of California, Santa Barbara**

Resources for Spatial Thinking in the Social Sciences: Perspectives for Criminology

This presentation highlights the conceptual foundations for resource development and training programs offered through the NSF-supported Center for Spatially Integrated Social Science (www.csiss.org) and the NIH-supported training program for GIS and Population Science (www.csiss.org/GISPopSci). It reviews the theoretical rationale for including spatial perspectives in social science research (including criminology), the availability of spatial analytic tools for studying social patterns and processes, and the integration of spatial statistics with methods of spatial visualization. Information on access to resources for learning and teaching and for applying spatial analysis will be provided, concentrating largely on programs offered by CSISS.

Frank Hardisty — **University of South Carolina**

Combining Spatial Statistics and Exploratory Mapping for Public Safety: Lessons From Epidemiology

Efforts are under way to combine spatial statistical techniques with exploratory mapping techniques to improve insights into spatial patterns. Thus far, these efforts have mostly occurred in the context of epidemiology. Applying the same methodologies to crime prevention should prove fruitful. One avenue of research is to leverage the best spatial statistical tools (in the Open Source R software) with the best exploratory mapping tools (GeoVISTA Studio). Both the possibilities and potential barriers to this set of tools and the general approach will be discussed.

Strategic Planning and Community Resources *Grand Ballroom F*

General Audience

Moderator

Robert B. Burns **Office of Juvenile Justice and Delinquency Prevention**

Presenters

Sylvia Oberle **Winston-Salem State University**

Using Mapping to Develop a Community Response to Crime Victims
(Sylvia Oberle, Lynn Harvey, Mike Carmichael)
The presentation examines how mapping is used to identify trends in repeat victimization in a high-crime neighborhood in Winston-Salem, North Carolina. The neighborhood is a demonstration site for the Parallel Justice project of the National Center for Victims of Crime. The project also maps out community resources and assets that can address immediate and long-term needs of victims, using spatial analysis to identify gaps in available resources. The results are then used to link victims to community response teams established to meet their needs. The presentation will assess the effectiveness of using mapping to create more effective and efficient victim service systems.

Caterina Roman **The Urban Institute**

From Theory to Practice: Mapping Community Indicators of Social Capital and Their Relationship to Crime
The importance of neighborhood environment for residents' well-being has been well documented in recent years. Currently, communities are in need of valid measures of social capital that can be collected inexpensively and repeatedly over time. The presentation discusses the development of new capacity measures and, in particular, tests of the theory concerning how measures relate to crime and violence and how GIS defines key variables. The presentation will highlight the utility of the measure for community organizations and procedures that enable local organizations to analyze and use the information in local planning.

Robert B. Burns **Office of Juvenile Justice and Delinquency Prevention**

E-Government Capacity to Do Analysis and Strategic Planning
(Robert B. Burns, Robert Samuels)
The Office of Juvenile Justice and Delinquency Prevention has been working with several member agencies of the Coordinating Council on Juvenile Justice and Delinquency Prevention to develop the capacity to display crime problem areas, community assets, and governmental assets that can help prevent and control crime. This initiative carries forward the President's Management Agenda to develop the agency's E-government capacity to do analysis and strategic planning for more efficient and effective use of limited resources. Resource gaps and available services are more readily understood when displayed via maps. GIS helps agency decisionmakers to identify gaps and overlaps among federal programs as well as other governmental and private sector resources.

3:00 pm - 3:30 pm **Break**

3:30 pm - 5:00 pm **Concurrent Panels**

Geographic Profiling I

Convention Center #203

Intermediate

Moderators

Hyuk Byun — **National Institute of Justice**

Presenters

Kim Rossmo — **Texas State University**

Geographic Patterns and Profiling of Illegal Land Border Crossings
(Kim Rossmo, Quint C. Thurman)
Border control is an important component of national security. Drug couriers, foreign terrorists, smugglers, and other criminals benefit from the range and porous nature of U.S. borders. Geographic information systems (GIS) and geographic profiling of illegal migration patterns can optimize Border Patrol resource allocation and help law enforcement agencies anticipate offender reactions. Similar to other criminal acts, illegal land border crossings require the individual to access the crossing point, avoid detection, and then escape. Results of an NIJ-sponsored research project analyzing the geography of illegal land border crossings from Mexico to Texas in the Del Rio Sector will be presented.

Jasper J. van der Kemp — **Netherlands Institute for the Study of Crime and Law Enforcement**

When to Use, When Not to Use, That's the Question
(Jasper J. van der Kemp, Sara Pulinckx, Karen van Beijsterveld)
Geographical profiling can be a very useful investigative technique. However it can also point in the wrong direction. To decide whether or not to use geographical profiling is more difficult than one might think. Essential for this decision is finding out if the case is appropriate for producing a valuable profile. For that, the offender must behave as a marauder or have a significant (and recognizable) anchor point with his criminal range area. As the presentation shows, differentiating marauders from “commuter type” offenders is very difficult.

Thomas F. Rich — **Abt Associates Inc.**

A Methodology for Evaluating Geographic Profiling Software
(Thomas F. Rich, Michael Shively)
In August 2004, an expert panel was convened to develop a methodology for evaluating geographic profiling software. Panelists included researchers and law enforcement practitioners whose expertise spanned criminology, crime analysis, geography, spatial

analysis, and software development. Abt Associates convened the panel and produced a report, available on the NIJ MAPS web site, which summarized the panel's findings and recommendations. This presentation provides an overview of the evaluation methodology.

Geography of Crime II (Rural Crime) *Grand Ballroom D*

General Audience

Moderator

Katrina Baum **Bureau of Justice Statistics**

Presenters

Michelle L. Scott **The Urban Institute**

Understanding and Reducing Survey Non-Response Rates Among Rural Farming Populations Through Spatial Analysis

(Michelle L. Scott, Daniel P. Mears)

To date, crime mapping and analysis have focused primarily on urban and suburban areas, with little attention given to rural communities. As part of an evaluation of an agricultural crime prevention initiative funded by the National Institute of Justice, The Urban Institute surveyed a sample of Central Valley, California, farmers about their crime victimization experiences. Based on the mailing addresses of the sample, researchers use spatial analysis to investigate potential geographic patterns associated with no response. The presentation then discusses possibilities for using such analyses to improve non-response rates in future surveys of similar populations.

Deborah Lamm Weisel **North Carolina State University**

Spatial Patterns of Rural and Regional Motor Vehicle Theft

Little is known about the spatial distribution of crime in rural areas. This research describes analysis of motor vehicle thefts from an area of North Carolina. To increase the number of incidents for analysis, offenses were aggregated over one year from ten local law enforcement agencies. Initial geocoding yielded reliable matches for only 49 percent of thefts, but GPS coordinates were also collected to improve data quality. The GPS coordinates provided a benchmark for assessing regional geocoding accuracy and address precision related to offenses on large parcels. This presentation presents the differences between GIS and GPS maps, and examines the unique patterns of motor vehicle theft revealed in the region.

Michael G. Wing **Oregon State University**

Using GIS to Map and Analyze Crime in the National Forests: A Research Agenda

(Michael G. Wing, Joanne F. Tynon)

The U.S. National Forest system spans 192 million acres and was intended to provide visitors an escape from urban conditions. As urban areas have spread, crime has also expanded into the National Forests, with sometimes-deadly consequences. This project uses a recently created spatial database to examine patterns of crime occurrence on National Forest lands. The analysis involves separating incidents into categories, including arson, assaults, resource

theft, off-highway vehicle use, and other commonly reported crimes. Researchers examine the spatial and temporal conditions that are unique for crime categories as a means for predicting where they will be most likely to occur.

Problem Analysis

Convention Center #204

General Audience

Moderator

Mary Garrand — **Alexandria Police Department**

Presenters

Michael S. Scott — **Center for Problem-Oriented Policing**

Understanding Crime and Disorder Problems: The POP Guides and the Center for Problem-Oriented Policing

It is important that crime mappers understand specific crime and disorder problems so the maps they produce can help decision makers to answer key questions. What sorts of maps are helpful for understanding a domestic violence incident, sexual assault problem, or false alarm problem? This varies across problems and depends on how the problem clusters spatially. A new practical, accessible body of knowledge about crime and disorder problems is being developed by the Center for Problem-Oriented Policing, with the Office of Community Oriented Policing Services (COPS) funding. These Problem-Oriented Guides for Police are an efficient and effective way for crime mappers and analysts to learn about a wide range of public safety problems.

Susan C. Wernicke — **Shawnee Police Department**

Rusty's Last Chance Saloon: A Problem-Solving Project

Rusty's Last Chance Saloon was a well-known "problem" for the Shawnee Police Department. For many years, the issues were largely left unaddressed, resulting in negative effects on quality of life for patrons and those working and living around the business. In an attempt to have a positive long-term impact on Rusty's and the surrounding area, the police department initiated a problem-solving project using crime data, GIS, and a POPS guide. This presentation covers the use of the data, the GIS, and other resources to address crime issues in and around Rusty's. Based on several factors, the strategic project appears to have had great success.

Mary Garrand — **Alexandria Police Department**

Problem Analysis and GIS: Addressing Problems and Implementing a Solution for Alcohol-Related Crimes

This presentation will focus on using GIS to analyze alcohol-related crimes in a specific area of Alexandria, Virginia, called Arlandria. Alexandria has experienced a downward trend in serious crime since 2000. Crime in Arlandria has followed this trend, but several addresses continue to generate calls for service, crime, and social problems. One such location is the 24 Hour Express. This presentation will illustrate the ongoing work being done in the

Arlandria neighborhood to combat crime and nuisance-related issues. This work will also illustrate how GIS can implement new policy and direct increased police presence in neighborhoods with specific crime problems.

Project Safe Neighborhoods

Grand Ballroom F

General Audience

Moderator

Lois Felson Mock — **National Institute of Justice**

Presenters

Scott H. Decker — **University of Missouri – St. Louis**

Using GIS to Map Gang Membership and Activity

(Scott H. Decker, Kim Martin)

This presentation will examine GIS data on gang and gang member locations in the city of St. Louis. Using a police-generated file of gang members, a number of issues will be addressed. Gang type, criminal involvement, gang turf, criminal involvement, and gang rivalries will be mapped. In addition, a number of other social and economic indicators of neighborhoods will be used for the analysis. Measures of crime, including homicides and assaults as well as gun recoveries, will also be mapped. Measures of spatial correlation will be employed to determine the utility of these data for police tactical and strategic interventions.

Joe Kabel — **Looking Glass Analytics**

Mapping and Query Technology to Distribute Local and Regional Gun and Violent Crime Data

Mapping of violent crime and gun-related crime has been used in Washington state to identify regional and local places in need of targeted resources from Project Safe Neighborhoods (PSN), but clear evaluation of the program needed a better strategy. In order to cost-effectively evaluate change over time in those areas, PSN in Washington has invested in a Web-based mapping and query system that automates the continuing collection and reporting of violent crime and gun-related crime data. The application data contain not only supporting information on UCR Part I crime incidents as reported to State officials, but also include incident record data from participating police agencies for sub-jurisdictional reporting.

Shellie Solomon — **Justice & Security Strategies, Inc.**

Quilting Data with GIS to Guide Gun Crime Interventions

(Shellie Solomon, Craig D. Uchida, Charles Katz)

Researchers from Justice & Security Strategies, Inc., will demonstrate how mapping and spatial analysis guide the efforts of Project Safe Neighborhoods (PSN) in the Southern District of Florida. Using data from a variety of sources, PSN participants identify hot spots of gun violence and use GIS data to develop, test, and assess interventions. Presenters will describe the process for identifying and targeting gun-related hot spots. Examples show how

law enforcement agencies and community-based organizations use spatial data to "drill down" to understand problems. Finally, presenters will discuss how these data are used for evaluation purposes.

Spatial Data Resources

Grand Ballroom E

General Audience

Moderator

Edwin W. Zedlewski — **National Institute of Justice**

Presenters

Andrew A. Beveridge — **Queen's College - City University of New York**

SocialExplorer: An Interactive Web-Based GIS System to Map and Visualize Crime and Social Characteristics

(Andrew A. Beveridge, Ahmed Lacevic)

SocialExplorer was developed to make it possible to create interactive sets of maps and data to view on the Web or using a stand-alone computer. The various features of this powerful visualization tool will be displayed. These include the ability to set up maps and data and work with them interactively by zooming, panning, changing variables, and comparing areas; the ability to generate views and reports; and ways to visualize change or differences in areas by creating and running slide shows.

Wendy Thomas — **University of Minnesota**

National Historical Geographic Information System: Locating and Linking to Historic Small Area Census Data

(Wendy Thomas, David Van Riper)

The National Historical Geographic Information System (NHGIS) at the Minnesota Population Center provides historic census data for the U.S. from 1790 to date for states and counties, tract level data from 1910, and all geographic levels from 1970. The system includes boundary files for counties and tracts and information on geographic change. Of particular interest to researchers is the ability to obtain data at all geographic levels for the past four censuses for incorporation into your GIS system; allowing you to attach socioeconomic data to specific areas and evaluate the impact of programs and policies. NHGIS is funded by the National Science Foundation.

Christopher D. Maxwell — **University of Michigan**

Creating Access to Crime Data for Practitioners and Researchers Through a GIS

The 1990s saw a substantial growth of research that focused on the spatial dimensions of crime. Similarly, law enforcement agencies across the nation have increasingly implemented crime analysis divisions that likewise focused on the spatial dimensions of crime. These parallel growths occurred because of cheaper and faster computers, improved and easier-to-use computer applications, more powerful statistical models, and an influx of financial support from the U.S. Department of Justice. However, many academic and professional arenas have not fully realized the benefits of this approach, in large part because of a lack of

access to data for research and training. To address this shortfall the National Archive of Criminal Justice Data is working toward creating an online GIS that will facilitate access to crime data that have spatial attributes. This presentation will focus on the development of this national data depository, by demonstrating its utility and functionality and discussing the data security and confidentiality issues faced with distributing these data.

Spatial Technology for Corrections

Convention Center #205

General Audience

Moderator

Stanley Erickson — **National Institute of Justice**

Presenters

Kevin Neimond — **National Association of Counties**

Counties Save Big With Offender Tracking Systems

As population rates continue to increase in many communities throughout the country, so too does the demand placed on county jail facilities. Overcrowding conditions are not uncommon as officials search for answers to this growing, expensive problem. Many counties are turning to technology for assistance. GPS and GIS-enabled offender tracking systems are being used to monitor non-violent criminals who otherwise consume valuable jail resources. The implementation of these technologies is helping to alleviate overcrowded conditions plaguing county jails.

George F. Rengert — **Temple University**

Mapping and Recording Incidents in Correctional Institutions

(George F. Rengert, Jerry Ratcliffe)

This presentation introduces a basic mapping and management routine of incidents within correctional institutions such as prisons and jails. It is designed for recordkeeping and simple analysis of the characteristics of incidents and participants. It supplies summary statistics on how many incidents occur by type and where and when they occur within the facility. It is designed for localities that do not have personnel trained to use computers for geographic analysis. It produces maps of the interior of the facilities and surrounding grounds, tabular reports, graphs and charts. It supplies quick searches on key words and stores reports on specific incidents.

Fred Roesel — **Florida Department of Corrections**

Corrections Operational Trend Analysis (COTAS), Practical Application for Crime Mapping in a Correctional Setting

The Florida Department of Corrections (FDOC) goal is to create a correctional crime mapping and information management system to monitor daily operations and identify trends, patterns, hot spots, and areas of concern for correctional managers. The creation of analytical tools using statistics, data modeling techniques and mapping will help identify key indicators of disruption, violence, and institutional risk, which may enable a better informed management to proactively minimize negative impacts. The implementation of this data

analysis and information management system will place the FDOC in the forefront of development and application of technology in correctional operations.

National Law Enforcement and Corrections Technology Center

Thursday, September 8, 2005

5:30 pm - 7:00 pm **Geographic Profiling Roundtable** ***Grand Ballroom A***

Moderator

Ronald E. Wilson	**MAPS Program**

Presenters

Sean Bair	**National Law Enforcement and Corrections Technology Center - Rocky Mountain**
David V. Canter	**The University of Liverpool**
Wilpen L. Gorr	**Carnegie Mellon University**
Keith Harries	**University of Maryland, Baltimore County**
Ned Levine	**Ned Levine & Associates**
Ian Oldfield	**Metropolitan Police Service**
Derek J. Paulsen	**Eastern Kentucky University**
Shari Lawrence Pfleeger	**Rand Corporation**
Thomas F. Rich	**Abt Associates Inc.**
Kim Rossmo	**Texas State University**
Lorie Velarde	**Irvine Police Department**
Robin K. Wilfong	**Pinellas County Sheriff's Office**

Sponsored by NLECTC-Southeast

Geographic profiling has grown rapidly as a technique for tracking down serial offenders. Despite some successful cases using geographic profiling, there have been several instances where it has either been wrong on predicting where the serial offender lives/works or has been inappropriate as a model. In August 2004, MAPS convened a roundtable panel to devise a methodology for evaluating geographic profiling software. The final report detailing this methodology was released in January 2005, with debate ensuing on the MAPS listserv. This roundtable session brings together geographic profiling software developers with those involved in devising the methodology to discuss the methodology and advancing geographic profiling research.

Please Note:
While this roundtable will be open to all attendees, participation will be for the parties mentioned above. All others will be there strictly to observe the proceedings.

Friday, September 9, 2005

7:00 am - 4:00 pm — **Registration and Continental Breakfast** — *Pre-Function Area*

7:30 am - 4:00 pm — **Vendor Exhibits** — *Pre-Function Area*

8:00 am - 9:30 am — **Information-Led Policing with Crime Mapping** — *Grand Ballroom ABC*

Moderators

Hyuk Byun — **National Institute of Justice**
and
Ronald E. Wilson — **MAPS Program**

Presenters

Scott H. Decker — **University of Missouri – St. Louis**

Robert L. Hubbs — **Knoxville Police Department**

Joseph Kezon — **Chicago Police Department**

Jerry Ratcliffe — **Temple University**

9:30 am - 10:00 am — **Break**

10:00 am - 11:30 am — **Concurrent Panels**

Advanced Crime Mapping and Analysis I — *Grand Ballroom E*

Advanced

Moderator

Katharine Browning — **National Institute of Justice**

Presenters

Albert K. Yeung — **Ontario Police College**

Crime Mapping and Analysis Beyond GIS: An Introduction to Spatial Data Warehouse and Spatial Data Mining for Policing and Law Enforcement

Geographic information systems are excellent tools for spatial data management. However, these systems are generally weak in data analysis and in integrating with sources of non-spatial business data. The analytical functionality of GIS is particularly restrictive with respect to crime mapping and analysis where both data and user's information needs are

spatio-temporal multi-dimensional in nature. This presentation explains the concepts of spatial data warehousing and describes how a spatial data warehouse can be constructed from operational crime mapping and analysis systems. It further examines various techniques and software tools that have been developed to extract relevant knowledge and intelligence from spatial data warehouses and demonstrates how such knowledge and intelligence can be applied to support law enforcement decisionmaking.

Luc de Montigny **University of Washington**

Methodological Advances in Fine-Scale Point Pattern Analysis: An Example From the Spatial Analysis of Injection Drug Use
There are compelling reasons to push crime analysis to finer spatial resolutions, yet popular GIS tools, such as those for point pattern analysis, can break down at these scales. This presentation will address issues concerning the transfer of current analytical techniques to micro-scale investigations and introduce an innovative approach to adapting clustering measures to the neighborhood scale. The methodological discussion will be grounded on a case study of the spatial analysis of an exceptional data set comprising over 12,000 records of discarded syringes collected in one of the most active hard-drug use neighborhoods in Montreal, Canada.

Michael D. Porter **University of Virginia**

Finding Changing Crime Regions Using a Classification Tree Method
A method is presented for detecting changes in the preferences or activity level of a criminal or terrorist point process. The locations of past events and an associated vector of geographic feature values are used in the analysis. Classification trees are used to partition the high dimensional feature space, which can include mixed variables. A generalized likelihood ratio test with Monte Carlo simulations is used to test for significance. Local changes can be detected in both the intensity of the point process and distribution of point locations. An example is provided using the locations of a particular crime over two time periods to demonstrate the use of this technique in detecting local regions of change.

Corrections, Parole, Probation II

Convention Center #205

General Audience

Moderator

Andrew L. Goldberg **National Institute of Justice**

Presenters

Frances Frick Burden **Pennsylvania State University**

Comparing Absolute Poverty, Relative Deprivation, and Diffusion of Poverty: An Analysis of Recidivism Patterns of Parolees in Georgia
(Frances Frick Burden, Barry Ruback)
Parolees are likely to recidivate because they have risk factors that predispose them to crimes (e.g., youth, broken family) and their incarceration weakened such protective factors as health and family relations. This study examines another risk factor for parolees, lack of

economic resources in neighborhoods where they reside post-release. Neighborhood poverty has been shown to encourage crime and increase levels of social disorganization, yet there is little consensus on the definition of poverty. This study examines three different types of poverty – absolute poverty, relative deprivation, and diffusion – and their relation to recidivism rates and individual parolee's recidivism throughout Georgia.

Robert S. Done **The Pima Prevention Partnership**

From Recidivism to Recovery: A GIS-Enabled Partnership to Reduce Prostitution
This research represents a collaborative effort between the Tucson Police Department, COPE Behavioral Services, Inc., and The Pima Prevention Partnership. Tucson is a High Intensity Drug Trafficking Area; and some neighborhoods are a marketplace for gangs, prostitutes, and injection drug users. In 2004, COPE began providing prevention services to prostitutes. Arrest data were collected before and after the delivery of prevention services for geospatial analysis. Baseline data were compared to data collected after services were delivered, to identify arrest, recidivism, and seasonal hotspots. The results support the efforts of the project partners to bridge the gap between recidivism and recovery.

Juanita Heimann **Seattle and King County Department of Public Health**

Identifying At-Risk Groups Among Prisoners Re-Entering the Community in King County, Washington
(Juanita Heimann, David Soletnter)
Public health agencies performed a geographic analysis of prisoner reentry patterns and community-level characteristics in King County, Washington, as part of a project to address the impact of returning prisoners on communities and to identify barriers to ex-prisoners' successful reintegration. The project mapped addresses provided by a cohort of prisoners released in 2003 to identify their distribution throughout the county relative to community risks and assets. Analysis identified homelessness among ex-prisoners and a highly disproportionate representation of African Americans in the cohort. Presenters discuss the full results and the need to address the issues and impact of the analysis on community mobilization.

Forensic Mapping *Convention Center #204*

General Audience

Moderator

TBD

Presenters

Christine Leist **London Metropolitan Police Service**

Mapping Forensic Scenes
Forensic data has often been considered to be relevant only to serious crimes, such as murder and rape. This is no longer the case. The Metropolitan Police (Scotland Yard), Forensic Analysis Unit, shows that it now can assist with volume crime, such as burglary and robbery.

The various types of forensic evidence are explained as well as automated forensic matching systems. The application of crime mapping to forensic data will be demonstrated in the workshop, using real crime series identified and linked across greater London. In conclusion, the value of forensics is demonstrated by showing the reduction of specific offenses in certain areas of London and following interventions by analysis, using crime mapping and forensic data.

Rebecca Bucht **City University of New York**

Geospatial Mapping of Forensic Science Data
(Rebecca Bucht, Peter DeForest)
This presentation aims to introduce the merger of forensic science data and geospatial mapping programs for crime analysis and intelligence purposes. Forensic science data traditionally aims to link people or objects with victims and crime scenes for evidential and investigative purposes. With evolution of computers and technology, forensic science data can be stored and processed in a way that allows for its timely integration into traditional crime analysis methods such as crime mapping. Including forensic data in crime mapping provides a further dimension for establishing linkages between incidents.

Geographic Profiling II

Convention Center #203

Intermediate

Moderator

Hyuk Byun **National Institute for Justice**

Presenters

Ian Oldfield **Metropolitan Police Service**

Volume Crime Profiling: Developing a Cost-Effective Tool
This paper describes a simple-to-use tool, run within Microsoft Excel and output to GIS software, which provides a profile surface familiar to those using other geographical profiling products. It is based on academic research supporting the notion that simple centrographic or center-mean-distance measures are at least as good as many of the current tools available for geographical profiling. The paper is part of the author's on-going research project to improve crime detection and locate offenders. It reinforces earlier work by demonstrating that simple methodologies are effective and available to the wider analytical community.

Wim Bernasco **Netherlands Institute for the Study of Crime and Law Enforcement**

Using Opportunity Structures in Geographic Offender Profiling
Geographic offender profiling (GOP) is an investigative activity for locating an offender's residence on the basis of offence locations. Current tools for GOP assume that potential targets are evenly distributed in space and that potential targets are equally attractive everywhere. In addition, they assume that travel distance is the only criterion that offenders consider when choosing a crime site. With the help of an extended target selection model,

GOP tools could be improved if they measured and used spatial variation in criminal opportunity structures. The results of a computer simulation study illustrate this finding to conference participants.

David V. Canter **The University of Liverpool**

IOPS: A GIS-Based Interactive Offender Profiling System
An interactive ArcView-based offender profiling system is described. This combines multidimensional scaling of criminal behavior with gravitational models of offender's journeys to crime in a real-time interaction with existing police databases. It allows the determination of distinct subsets of offence behavior (m.o.) from empirical structures found in geographic co-occurrence. These can then be used as templates to search databases in order to put crimes with similar m.o. on a map. Online functions then allow the interrogation of these crimes to find the likely location of offenders and their likely characteristics. The database can be questioned using the results to find and locate possible suspects. Operational and research applications of IOPS illustrate its potential.

Geography of Crime III

Grand Ballroom D

General Audience

Moderator

Katrina Baum **Bureau of Justice Statistics**

Presenters

Daniel Lockwood **Savannah State University**

Mapping Violent Crime in Savannah's Historic District, 1993-2003
This paper combines information from police files, the U.S. Census of Population and Housing, and land-use map layers to look at theoretical explanations for violent crime in Savannah's Historic District during a 10-year period. Both police reports of crime locations and the home addresses of arrested offenders are used in the analysis. Areas of social disadvantage within or close to the Historic District have high rates of simple and aggravated assault, indicating the presence of subcultures of violence in these areas. Robbers from these locations prey on nearby vulnerable persons engaged in entertainment activities. Most robberies are street robberies occurring in the evening. Theoretical conclusions indicate that dispute-related violent crime is associated with social disadvantage. Entertainment activities close to such residential areas of social disadvantage encourage robbery. This information can be applied to urban planning and crime prevention strategies. A map for a self-guided walking tour of crime locations near the conference hotel will be distributed.

Jennifer B. Robinson **Northeastern University**

The "Big Dig": Implications for Spatial Patterns of Crime in Boston, Massachusetts
Theory in Environmental Criminology postulates that changes in the urban structure will produce changes in spatial and temporal patterns of crime. This research begins the examination of spatial patterns of crime in Boston, Massachusetts, and focuses especially on documenting longitudinal effects relating to spatial patterns of crime.

Xiaowen Yang **University of Florida**

"Near Repeat" Burglary Analysis
(Xiaowen Yang, Richard Schneider)
To explore near-repeat burglaries, this research analyzes 7000 burglary cases reported by the Gainesville, Florida, Police Department over a three-year period. It employs three widely used statistical techniques: the Knox test, the Mantel test, and the K-nearest-neighbor test to detect space-time interaction among the data. The intent of the research is to corroborate a study that pointed to the existence of the near-repeat burglary phenomenon. It attempts to answer the questions: (1) What are the spatial and temporal thresholds for defining near repeat burglary; and (2) What are methodologies to detect this phenomenon?

GIS Applications I (Web Mapping)

Convention Center #202

General Audience

Moderator

Paul Trudt **St. Louis County Police Department**

Presenters

Rickey Thomas **National Guard Bureau Counterdrug Program**

National Guard Bureau - Counterdrug Office's Digital Mapping Server Portal: Providing No-Cost Mapping Tools for Public Safety
(Rickey Thomas, Michael Thomas, Melinda Higgins, Kevin Shaw, Frank McCreedy, John Sample, Nick Faust)
The Digital Mapping Server (DMS) Portal developed by the National Guard Bureau Counterdrug Office, Naval Research Laboratory, and Georgia Tech Research Institute, supports counterdrug and homeland security mapping requirements at no cost to users. The latest version of the DMS Portal provides “one stop” access to over 500 servers distributed around the world. Since the number of available data sources grows rapidly, users face a challenge finding the targeted data. DMS implements a new search architecture that allows users to perform key word search for data and layers, addressing this challenge and making no-cost Internet mapping tools more useful than ever.

Penny Peters **Oakland County Information Technology**

Using Web Technologies to Distribute Crime Maps
This presentation demonstrates how Oakland County CLEMIS is using Web-based content management tools to roll out crime maps and statistics to local residents. The technology enables individual agencies to publish Web sites with downloadable maps detailing crime

activities by area (location) and by date (range). Police agencies can maintain a police department intranet site for publishing information for day-to-day operations such as roll call, promotions, meetings, etc. Additionally, a secured shared intranet is available for all CLEMIS participants interested in information sharing for open cases, parolees, trends, hotspots, and other information.

Paul Trudt **St. Louis County Police Department**

Integrated Web-Mapping of Value-Added Regional Crime Data
(Paul Trudt, Toby Stanerson, Mark Dougherty)
MapMATRIX is a new Web-mapping module in the CrimeMATRIX system that allows users to visualize locational data across a four-county region centered on St. Louis, Missouri. Composed of six different Web-mapping interfaces, MapMATRIX allows users to search for locations related to sex offenders, crime events, probationers, pawnshop activity, gangs, and other persons of interest (POIs). This presentation will discuss the application of Web-mapping to criminal data warehousing and present demonstrations of the MapMATRIX Web-mapping module.

Making the Federal Case: Working with the U.S. Attorney's Office in a Collaborative

Grand Ballroom F

General Audience

Moderator

Daniel Drake **U.S. Attorney's Office**

Presenters

Mike Baggett **City of Savannah**
and
Katrina Patterson **Brunswick Police Department**
and
Richard Strait **Savannah-Chatham Metropolitan Police Department**

Making the Federal Case: Working With the U.S. Attorney's Office in a Collaborative
(Daniel Drake, Mike Baggett, Katrina Patterson, Richard Strait)
U.S. Department of Justice (DOJ) strategies and programs to reduce crime across the USA increasingly mandate that Federal, State and local law enforcement, along with effected communities, become partners. U.S. Attorneys and other Federal agencies must rely on local crime mapping capabilities to provide the information for compliance with DOJ requirements. Sharing this vast resource called "Crime Mapping" has enhanced the capabilities of Federal, State and local law enforcement to reduce crime, expand resource allocations, and track case management, and has resulted in safer communities. This presentation will display positive results of the Southern District of Georgia's U.S. Attorney's Office use of crime mapping information provided by state and local law enforcement in the Weed and Seed and Project Safe Neighborhoods (PSN) programs.

11:45 am - 1:15 pm **Keynote Luncheon** ***Grand Ballroom ABC***

Keynote Address

Crime Map Competition and Awards Ceremony

1:30 pm - 3:00 pm **Concurrent Panels**

Applications of Crime Travel Demand Modeling I

Convention Center #203

Advanced

Moderator

Ned Levine **Ned Levine & Associates**

Presenters

Ned Levine **Ned Levine & Associates**

An Overview of Crime Travel Demand Modeling
The presentation will present a brief overview of crime travel demand modeling. Crime travel demand theory attempts to model crime travel over an entire jurisdiction or metropolitan area. There is a data collection step and four modeling steps: trip generation, trip distribution, mode split, and network assignment. Once calibrated, the model can be used to examine policy and policing interventions.

Richard Block **Loyola University Chicago**

Modeling Police Interventions to Reduce Street Robbery in the Near Chicago Rapid Transit Stations: An Analysis Using CrimeStat III's Travel Demand Module
In many Chicago neighborhoods, street robbery is concentrated in the first few blocks surrounding a rapid transit station. In this presentation, CrimeStat III's travel demand module will first be used to model robbery within ½ mile of all rapid transit stations outside of the Central Business District. Based on that analysis, the possible effects of several police interventions in the surroundings of four stations and in the residence areas of offenders on incidents near the stations will be estimated. The analysis will consider variation by time of day, by residence of the offender, and by general crime patterns in the neighborhood surrounding the four stations. Possible displacement effects of the interventions will also be analyzed.

Philip Canter **Baltimore County Police Department**

Use of Crime Travel Demand Modeling for Drunk Driving Interdiction in Baltimore County
(Philip Canter, Ned Levine)
Using the crime travel demand model, the effects of increased law enforcement deployment on DUI behavior is investigated. Using data from Baltimore County for 2000 to 2003, the

effects of patrolling roads with a history of DUI crashes will be modeled on DUI arrests and DUI crashes. It is expected that DUI arrests should increase while DUI crashes should decrease. Comparisons will be made between actual DUI roadway links used and those predicted by the model. It may be possible to actually deploy patrols in order to test the strategies developed by the model.

Corrections, Parole, Probation III

Convention Center #205

General Audience

Moderator

Gerald Gaes — **National Institute of Justice**

Presenters

Calvin C. Johnson — **Court Services and Offender Supervision Agency**

Using GIS Technology to Improve Community Supervision
(Calvin C. Johnson, Dwight Estrill, and Jenny Mlinarcik)
Using GIS to identify the co-location of residences of offenders under community supervision and crime "hot spots" in the District of Columbia, the presentation will demonstrate how these data are used to identify proactive community supervision strategies that help CSOSA (Court Services & Offender Supervision Agency) to meet its performance targets.

Jim Pingel — **Wisconsin Sentencing Commission**

Using Maps to Scan the Environment: Policy Analysis at the Wisconsin Sentencing Commission
(Jim Pingel, Michael Connelly)
The use of mapping as an analytical tool has steadily expanded over the last decade – across law enforcement, and into other areas of criminal justice. State sentencing commissions present an interesting case study. While there is not a role for sophisticated spatial analysis, sentencing commissions typically must process a great deal of relatively complex data. GIS adds value as a tool for scanning the environment and framing discussions about specific issues. The Wisconsin Sentencing Commission uses maps of its merged sentencing data to assess sentencing disparity and to define criminal justice problems like the emergence of methamphetamine in rural counties.

Lou Reedt — **U.S. Sentencing Commission**

Federal Drug Trafficking Offenses: Mapping Trends in Drug Type 1992-2002
(Lou Reedt, Courtney Semisch)
Federal sentencing data provides insight into federal drug enforcement and prosecutions. In particular, federal sentencing data demonstrates the wide variation in predominant drug types in the 94 federal judicial districts. This non-technical presentation analyzes the geographical trends in federal drug offenses between fiscal years 1992 and 2002. Maps of U.S. Sentencing Commission data will be used to analyze changes in predominant drug types across federal judicial districts and the important sentencing trends accompanying these changes.

Crime Mapping Issues I

Grand Ballroom F

General Audience

Moderator

Michael Leitner — **Louisiana State University**

Presenters

Spencer Chainey — **Jill Dando Institute of Crime Science**

How Accurate Is My Hot Spot Map?

(Spencer Chainey, Sebastian Uhlig, Elena Garcia)

Hot spot mapping is the most basic form of crime prediction – hot spot maps are used to help police agencies and supporting partner organizations to identify problem areas and target resources to help address the crime problems in these hot spots. In essence, hot spot mapping uses data from the past to help direct future actions. But how accurate is a hot spot map at telling us where crime happens next? Several studies have explored and compared hot spot mapping techniques, but have only discussed the use of these methods for identifying hot spots of crime, usually based on their ease of use and ability to spatially interpret the location, size, shape, and orientation of clusters of crime incidents (Chainey et al., 2002; Ratcliffe and McCullagh, 1998; Jefferis, 1999). This research compares the most common crime hot spot mapping techniques and has evaluated how accurate they are for describing where crime happens next.

Apollo Kowalyk — **Edmonton Police Service**

Crime Mapping and Everyday Use: Solving the Riddle of Its Application to Front-Line Policing

Crime mapping is an analytical tool that has enjoyed increased popularity in recent years. However, insofar as its application to frontline policing is concerned, there exists a gap between the analysis of crime data and its direct application to patrol strategies at the level of the individual officer. The term "crime mapping" is misleading because the mapping occurs after the fact, with limited meaning for patrol officers. While crime mapping may be beneficial to dedicated investigative units (Homicide, Sex Crimes), front-line patrol officers would derive greater benefit from disorder mapping. The gap between crime analysis and the operationalization of this data at the level of the front-line officer should be addressed.

Michael Leitner — **Louisiana State University**

Towards the Development of a General Framework for Visualizing the Location of Confidential Crime Data on Maps

The purpose of this research is to establish guidelines for locating confidential crime data on maps. Such guidelines do not currently exist but are important for law enforcement agencies that disseminate personal crime data to the public. The challenge for these agencies is to balance between the citizen's right to know and preserving a citizen's right to privacy. This research applies a method called "geographic masking" within an empirical perceptual framework and is a continuation and further development of research presented at last year's

conference. Appropriate geographic masking methods are important for legal reasons and for unfair informal redlining issues.

Geography of Crime IV (Gun Violence) *Grand Ballroom D*

Intermediate

Moderator

Lois Felson Mock — **National Institute of Justice**

Presenters

Christopher Badurek — **Appalachian State University**

Comparing Areas of Risk of Recidivism for Parolees and Probationers Identified as Being Potential Contributors to Gun Violence

(Christopher Badurek, Pamela Beal, Peter St. Jean)

To support the Project Safe Neighborhoods (PSN) Project in Buffalo, New York, this study examined the location and neighborhood characteristics of parolees and probationers. The locations of 118 offenders from Federal, State, and county agencies, identified as being at high risk for committing gun violence over a 2.5-year period, were examined. A Social Stress Index (SSI) created from census variables and gun-related calls for service (CFS) was used to determine areas of high risk and percentage of offenders released into these areas. Recidivism of these offenders was also examined to determine the relationship between areas of risk and re-arrest.

Charles C. Branas — **University of Pennsylvania**

Philadelphia Gun and Alcohol Study

This presentation describes the Philadelphia Gun and Alcohol Study, a novel case-control research protocol that leverages numerous Federal, State, and municipal agencies as part of a wireless, near-real-time tracking system for shootings, comparing to matched individuals who have not been shot in the city of Philadelphia. The study assesses both individual case factors (such as alcohol consumption and gun possession) as well as geographic ones (such as alcohol outlets and gun dealer densities) as risk factors for being injured with a firearm.

Douglas J. Wiebe — **University of Pennsylvania**

Mapping Adolescents' Daily Activities in a Study of Assault in Philadelphia

The study involves interviewing adolescent assault victims in the hospital shortly after treatment is provided and using portable, computerized mapping technology to create a dynamic graphic. The image provides a minute-by-minute record of how, when, with whom, and where the subject spent time, as he or she walked or otherwise traveled from location to location and from activity to activity on the day of the injury. The goal is to learn how adolescents do things and which places they go have an impact on the likelihood that they will be assaulted with a non-gun weapon.

GIS Applications II (State-Level Systems) *Convention Center #202*

General Audience

Moderator

Jason Dalton **Spatial Data Analytics Corporation**

Presenters

Andrew Arana **Ohio Office of Criminal Justice Services**

Two Way Street: Providing Crime Mapping and Statistics to Ohio Law Enforcement Agencies

The Ohio Incident-Based Reporting System (OIBRS) is Ohio's version of the National Incident-Based Reporting System (NIBRS). Ohio Office of Criminal Justice Services (OCJS) maintains the Ohio Incident-Based Reporting System repository that accepts data submitted by law enforcement agencies. Previously, contributing law enforcement agencies did not have any functional access to the statewide data in a reasonable amount of time. With the release of the OIBRS Crime Statistics and Mapping Portal, participating agencies can create maps depicting crime statewide. The OIBRS repository now accepts full incident location information including street address and latitude/longitude. OCJS uses this spatial information to create thematic and street-level incident maps.

Joe Kabel **Looking Glass Analytics**

Liquor Outlet Violations Reporting System (LOVRS): A Public On-line Inventory of Liquor License Establishments in Washington State and Their History of Violations

This presentation introduces a statewide on-line mapping and data query tool called the Liquor Outlet Violation Reporting System (LOVRS). The system, developed in partnership with several Washington state agencies, hosts a variety of information on liquor outlets and their histories of liquor law violations. The system includes violation history for individual outlets and some summary statistics as well as contextual overlays such as area DUI arrests, outlet density, and youth survey risk scale scores. It will be available to the public and provide data that has traditionally been hard to access and infrequently analyzed, spatially or otherwise.

Jason Dalton **Spatial Data Analytics Corporation**

A Web-based Crime Analysis Tool for Regional NIBRS Data

The University of Virginia, in cooperation with the Virginia Department of Criminal Justice Services (DCJS), produced an online archive copy of the state NIBRS data repository, which is queryable across most IBR fields in real time. The query results are then made available to a suite of analysis tools in a package called the Web-based Crime Analysis Toolkit, or WebCAT. For the first time, IBR data for Virginia is queryable across all jurisdictions, with summary charts and reports available as well as downloadable formats. In Virginia, there is no location attribute associated with an IBR report at the state level. As an important tool for analysis and prevention, crime-mapping locations needed to be integrated into the data repository. The team designed and built "IBRsync," an extraction, transformation, and loading tool for WebCAT. A participating system administrator installs this application at

the local jurisdiction. The local system then communicates with the WebCAT IBRsync Web service to update the locations from each incident with the address information included in the local records management system. The transfer data format is a subschema of the Global Justice XML Data Model, or GJXDM. This architecture allows users whose local policies do not allow data access tools like IBRsync to create their own export function using the GJXDM model. Communication between the client and server is authenticated and encrypted. Once the data repository is updated, mapping tools are made available via the Web-mapping interface of WebCAT. This interface is powered by Manifold GIS. The presentation discusses the architecture design methods and challenges as well as the products that overcame these hurdles. WebCAT is currently under testing phase at the Virginia DCJS. Further refinement and extension to other states is planned for next year.

Spatial Data Analysis II

Grand Ballroom E

Intermediate

Moderator

James W. Meeker — **University of California, Irvine**

Presenters

Meagan E. Cahill — **The Urban Institute**

Accounting for Spatial Patterns of Crime in Statistical Analyses: An Example From Portland, Oregon

The present study aims to provide a better understanding of the spatial nature of crime—the geographic relatedness of crime in different neighborhoods—through an analysis of violent and property crime in Portland, Oregon. The spatial analyses begin with Exploratory Spatial Data Analysis (ESDA). The results of the ESDA inform the subsequent regression modeling. Structural covariates and spatial processes are modeled using spatial regression techniques. Specifically, a comparison of traditional, non-spatial regression models and models where a spatial lag term is introduced will be presented. The research demonstrates the importance of explicitly modeling spatial effects in crime studies.

Anthony J. Luongo — **Temple University**

Gone in Sixty Seconds: Examining Motor Vehicle Theft in Philadelphia as a Diffusion Process

A motor vehicle is stolen every 25 seconds in the U.S., costing vehicle owners $8.6 billion annually and placing significant burdens on the criminal justice system. The high volume nature of the crime often means that analysts can generate hot spot maps. But in an information-led policing environment, there is need for a more strategic understanding of the underlying factors for crime hot spots. This presentation contrasts the power of two criminological theories, social disorganization and routine activities, and two analytical methods, ordinary least squares (OLS) and geographically weighted regression (GWR), to explain patterns of urban vehicle theft in Philadelphia, Pennsylvania.

James W. Meeker **University of California, Irvine**

Using Hotter/Colder-Than-Expected Spot Methods to Map the Concentration of Research Opportunities
(James W. Meeker, Ronald E. Wilson, Bryan Vila)
Geographic information systems (GIS) have gained widespread acceptance as an effective way to visualize complex information and study place-based data. But the real promise of GIS lies in its potential to open new research methods to address the effect of contextual and environmental variables. As an example of this potential, this study suggests a novel, four-step, multi-method approach for theory testing that (1) develops a strong multivariate predictive model using conventional statistical techniques; (2) generates a map of hotter-than-expected and colder-than-expected locations – places where theory significantly over- or under-estimates observed phenomena – in order to compare predicted concentrations of social phenomena (a.k.a. "hot spots") with observed concentration; (3) uses GIS-based analyses to further refine the model by accounting for spatial autocorrelation; then (4) produces a map that targets locations where qualitative methods and direct observation are most likely to reveal interesting phenomena (e.g., social processes that are especially criminogenic or especially constructive).

Tactical Crime Analysis

Convention Center #204

Intermediate

Moderator

Steven R. Hick **National Law Enforcement and Corrections Technology Center - Rocky Mountain**

Presenters

Matthew White **Jacksonville Sheriff's Office**

Link Analysis Through Relationship Classes in ArcGIS 9
(Matthew White, Kasim Khan)
Relationship classes are new in ArcGIS 9 and, for analysts, their potential is enormous. The presentation will introduce the audience to this new capability and then discuss how this feature can be set up to allow for link analysis without ever leaving the GIS software program.

David Felcan **Avencia, Inc.**

Automated Early Warning System for Crime Incidents
The project has developed a system to discover, display, and analyze crime density changes (i.e., spikes) throughout Philadelphia, Pennsylvania, by comparing recent crime data to past trends. Every night an application calculates values that indicate the probability and severity of a spike for each grid point in a set of grid points covering the entire city. District police captains are notified of new spikes via e-mail, and can visit a Website to view spike maps. From these maps, one can view detailed data of the incidents responsible for the spike. Presenters discuss the system's implementation and algorithms.

Steven R. Hick — **National Law Enforcement and Corrections Technology Center - Rocky Mountain**

Evaluation of Spatial Forecasting Techniques Used in Tactical Crime Analysis
Spatial forecasting is used in tactical crime analysis to "predict" the area of a future event in a crime series. This allows law enforcement to take a proactive approach to criminal activity instead of a reactive approach. The concept has received recent publicity and scrutiny as a valuable new option in law enforcement due to various successes across the country. A survey of the crime analysis community on the use of spatial forecasting techniques was conducted to determine the most popular techniques in use today. The Minimum Convex Polygon, 68% and 95% Standard Deviation Rectangles, 50% and 90% Jennrich-Turner Ellipses, and Kernel Smoothing based on Spider Distance Analysis were determined to be the more prevalent techniques. These methods were looked at in depth for their ability to "forecast" the area within which the next event in a crime series will occur by evaluating them on 31 solved crime series. The series were collected from various analysts across the country, have a varying number of events and geographic distribution, and are of different crime types. The techniques were evaluated on the number of correct predictions and size of forecasted areas. The history and evolution of these techniques toward use in crime analysis is discussed, along with the possibilities for future research.

3:00 pm - 3:30 pm **Break**

3:30 pm - 5:00 pm **Concurrent Panels**

Applications of Crime Travel Demand Modeling II

Convention Center #203

Advanced

Moderator

Ned Levine — **Ned Levine & Associates**

Presenters

Dan Helms — **National Law Enforcement and Corrections Technology Center - Rocky Mountain**

Applications of Crime Travel Demand Modeling
This presentation will describe how modeling crime travel demand can influence strategic police decisions. In this example, real-world crime data from Las Vegas, Nevada, will be used to construct a hypothetical model involving a new freeway addition. The model's ability to forecast the changing pattern of criminal movement when this new transportation segment becomes available will allow police planners to adjust manpower, beat design, or even redeployment of substations before the new change is implemented, a year or more in advance, rather than merely react to unstudied changes. By way of comparison, the model's ability to successfully predict the influence of a new transportation element, a monorail in this case, will be assessed against real data before and after the monorail was actually completed in 2003.

Elizabeth Groff **Institute for Law and Justice**

Implications of Travel Demand Modeling for Preventing Homicide
(Elizabeth Groff, Tom McEwen)
This research explores the use of crime travel demand modeling to better understand and prevent homicides. Crime travel demand modeling provides a more robust method than simple distance to crime measures for understanding how these trips influence the convergence of victims and offenders in space and time. This is especially important given the overall increases in mobility: Americans are taking more frequent and more complex trips (Levine 2004, 11.3). Both victim and offender crime trips are modeled to identify socio-economic and environmental characteristics of areas that produce and attract trips. Finally, the model evaluates potential prevention strategies.

James L. LeBeau **Southern Illinois University at Carbondale**

Effect of Drug Raids on the Trip Behavior of Drug Offenders in Charlotte
This research uses data on drug arrests and raids in Charlotte-Mecklenburg, North Carolina. Using Crimestat's time travel demand, the research assesses the impact of police drug raids on the travel behaviors of subsequent drug offenders and the spatial patterning of offenses. Tests will be conducted modeling the police raids as an intervention variable to the trip generation origin production model, as an intervention variable in the trip generation destination/attraction model, and as an intervention variable in the impedance function.

Corrections, Parole, Probation IV (Public Policy) *Convention Center #205*

General Audience

Moderator

Gerald Gaes **National Institute of Justice**

Presenters

Peter Wagner **Prison Policy Initiative**

Prisoners of the Census: Criminal Justice Populations in Census Data
The Census is the largest and most accurate data collection in U.S. history, but it has one strange glitch: it counts prisoners as residents of the prison location, not their homes. As a result, legislators drawing new districts and demographic researchers often see unexpected results. As part of an effort to quantify the impact of this custom, the presenter developed a series of tools and techniques to locate correctional populations in the Census data. Possibilities and pitfalls in using Census data for criminal justice policy research are discussed. Participants will find out where to look for answers to questions the Census Bureau did not ask.

Eric Cadora **JFA Institute**

Justice Reinvestment
(Eric Cadora, Charles Swartz)
Changes in incarceration policies over the last 25 years have increased the prison population tenfold. While policymakers have grappled with the consequences of this shift, new GIS

analyses of incarcerated populations have begun to reveal the extent to which they are concentrated after release into a few inner city neighborhoods, which have become the loci of a new internal migration between neighborhood and prison. Understanding the "New American Migration" and the implications for future policy points the way to new opportunities to attend to the well-being of these high resettlement neighborhoods in the confines of existing resources.

Gerald Gaes **National Institute of Justice**

A Spatial Data Analysis of Incarceration, Baltimore City, Maryland
(Gerald Gaes, Ronald E. Wilson)
By using spatial data analysis, this study seeks to gain additional insight into the effects of incarceration practices on crime in Baltimore City, Maryland. Spatial data analysis allows researchers to evaluate explanations for an apparent salutary effect on “neighboring” geographical areas. The research examines several theories and builds spatial models to explain crime trends as well as, an understanding of changing demographics and economic pressures that contribute to pervasive crime problems.

Crime Analysis Tools and Techniques *Convention Center #204*

General Audience

Moderator

Douglas Hicks **Minneapolis Police Department**

Presenters

Christopher S. Gebhardt **Taylorsville Police Department**

Affordable Crime Mapping Solution
This presentation will familiarize participants with an affordable mapping solution (under $300) which the Park City Police Department used to map incidents.

Stacy Belledin **Jacksonville Sheriff's Office**

Analysis With the New Fish Tool by ESRI
This presentation will introduce a new tool available through ESRI Charlotte to aid analysts in quick referencing of data for research and analysis. This utility, called the Fish Tool, can be used to drill down large amounts of data in a systematic way and allows different displaying and exporting methods for maps and reports.

Douglas Hicks **Minneapolis Police Department**

ArcGIS Spider Diagrams and Crime Hot Spots
Spider diagrams are composed of radiating lines from a central location (i.e., crime hot spot area) to multiple points (residences of people arrested in the hot spot). Spatial joins allow the calculation of distance statistics between the hot spots and arrestee residences. Management of hot spot crime areas and problem resolution strategies can be improved by expanding the

scope of hot spot patrol and analysis to include neighboring areas of concentrated arrestee residences. The Minneapolis Police Department has used hot spot spider diagrams and will discuss its experience.

Crime Mapping Issues II (Data Sharing) *Grand Ballroom F*

General Audience

Moderator

Julie Wartell **San Diego District Attorney's Office**

Presenters

Patrick Hansen **University of Virginia**

The Geospatial Repository for Analysis and Safety Planning – Software Distribution Program

(Patrick Hansen, Jimmy Benani, Jason Dalton)

The Geospatial Repository for Analysis and Safety Planning (GRASP) is an important product for assisting agencies and regional coalitions. It has an infrastructure that allows them to share, audit, and catalog important critical infrastructure data for interagency cooperation and planning. GRASP has gone through several important improvements and iterations in its five-year history. The most important innovations in the past year have been the removal of proprietary software and the distribution of the entire GRASP system on an installation CD. This talk describes the use of GRASP as a regional data sharing and translation tool and provides the audience with their own GRASP system for internal and regional use.

Susan C. Wernicke **Shawnee Police Department**

Kansas City Regional Crime Analysis and Geographic Information Systems: (Hard) Lessons Learned

This effort was an attempt to create a regional data-sharing and crime-mapping system for more than 90 local police agencies (10 counties) in the states of Kansas and Missouri. A bi-state regional data-sharing and crime-mapping endeavor had not been attempted in the United States previously. It was originally modeled after the Baltimore County (Maryland) Regional Crime Analysis Geographic Information System (RCAGIS) program. No one is using this "somewhat in progress, but never used" program. It has had no impact on crime, or crime analysis, and use of GIS. The KC-RCAGIS project sits today in this neutral status.

Julie Wartell **San Diego District Attorney's Office**

Crime Mapping on the Web: Implementing a Multi-Jurisdictional Approach for Community and Law Enforcement

This presentation will cover San Diego, California's regional effort, from conceptualization through implementation. Issues range from data acquisition to persuading chiefs and politicians; from procurement to user committee decisionmaking. San Diego is not new to looking at crime maps on the Web, but this project takes advantage of new data, technology,

and ideas. In addition, the 50-plus Federal, State, and local ARJIS law enforcement agencies will now be able to map and analyze crime data combined with other relevant criminal justice, demographic, and geographic data.

Geography of Crime V (Urban Issues) *Grand Ballroom D*

General Audience

Moderator

Brett Chapman — **National Institute of Justice**

Presenters

Andrew Hart — **Center City District**

Center City District: A Unique Partnership Between Law Enforcement Agencies, Property Owners, Businesses, and Residents in Center City Philadelphia

The Center City District (CCD) is a Business Improvement District in downtown Philadelphia, Pennsylvania, supported by mandatory assessments on real property in an area of 120 blocks, encompassing more than 2,100 properties. The CCD's Crime Prevention Services Group's aim is to reduce crime and enhance the perception of safety in Center City Philadelphia. The CCD has forged a unique partnership with law enforcement agencies, property owners, businesses, residents, and visitors to make Center City Philadelphia a thriving 24-hour downtown. The CCD partnership provides crime prevention services including crime mapping, which is used to identify crime trends, patterns, and information used to make strategic deployment decisions.

Raymond Wickline — **Metropolitan Police Department, District of Columbia**

Oriented Interagency Response to Violent Crime Focus Area Hot Spots

(Raymond Wickline, Peta Myers)

The Metropolitan Police Department (MPD) 2004 statistics show the decline of violent crime in its hot spots at twice the rate of decline occurring in the remainder of the city. Using block frequency statistics to map areas with high incidence of violent crime, MPD implemented the Hot Spots Response as part of its Policing for Prevention Strategy, in conjunction with community partnerships for reducing and preventing crime. The hot spots were monitored using in-house statistical tools, crime mapping, and I2 link analysis tools presented through the COMPSTAT model. Using the whole-of-government approach, the District of Columbia has shown success in providing a full spectrum of community services to address crime and concerns for community wellness.

David Martin — **Wayne State University**

Dirty Dozen Part II: The Impact of Civil Enforcement on Gun Violence on Detroit's Eastside

(David Martin, Jack Fennessey)

Since 2001, the Wayne County prosecutor has used civil enforcement strategies to impact over 1,600 abandoned properties in Detroit neighborhoods. Harvard University cited this

approach as one of the nation's 50 most innovative government initiatives in 2003. Currently, an initiative, supported by a 2004 State of Michigan/Office of Drug Control Policy Byrne Grant, seeks to enhance and expand these efforts to address the deeply rooted culture of violence in Detroit. This project systematically engages neighborhood residents to help identify persistent problem locations ("The Dirty Dozen") and to develop long-term solutions. In the target area, a collaborative group composed of prosecutors, police, and neighborhood residents prioritize action on persistent crime and disorder locations and implement innovative enforcement and community-building activities. Key activities include parcel-based crime analysis, civil and code enforcement, and community organizing through the "Adopt-A-Block" strategy. The project includes ongoing analysis of persistent problem locations, physical surveys of the target area using ArcPad mobile mapping software, and data sharing among key partners using Keyhole 2 LT software.

Office of Juvenile Justice and Delinquency Prevention (OJJDP) GIS User Focus Group

Convention Center #202

General Audience

Moderators

Robert B. Burns — **Office of Juvenile Justice and Delinquency Prevention**

and

Robert M. Samuels — **Office of Juvenile Justice and Delinquency Prevention**

OJJDP GIS User Focus Group

(Robert B. Burns, Robert M. Samuels)

The purpose of this focus group is to gather feedback from potential users of OJJDP's Web-based GIS tool (in development), designed to support the Department of Justice and law enforcement around the country. OJJDP is looking for input on potential functionality, potential security concerns, and overall input from those most likely to benefit from such a tool.

Spatial Data Analysis III

Grand Ballroom E

Advanced

Moderator

Angela M. Moore Parmley — **National Institute of Justice**

Presenters

Terri Adams-Fuller — **Howard University**

Examination of Changes in the Spatial Diffusion of Homicide in the District of Columbia, 1989-2002

Several scholars have noted that the rise and fall of the nation's homicide rates coincides with the emergence and decline of volatile drug markets in the nation's drug scene. Although a number of studies have asserted that drug market activity is a major factor

influencing both the surge and drop in homicide rates, most of these postulations are based upon descriptive analyses, void of any considerations of time and space. Only a few studies (e.g. Cork 1999, Rosenfeld et al. 1999) have empirically explored the spatial and temporal dynamics associated with both the changing patterns of homicide and drug market activity within a particular geographic space. This study analyzes the spatial patterns of homicide and drug market activity in the District of Columbia and identifies factors that may serve as potential barriers to the encroachment of such activities at the neighborhood level.

André B. Rosay **University of Alaska, Anchorage**

Using Exploratory Spatial Analyses to Examine the Spatial Patterning of Reported Sexual Assaults

At the last Crime Mapping Research Conference, this project presented information on the spatial clustering of sexual assaults in Anchorage, Alaska. In the current presentation, researchers use exploratory spatial analytic techniques to explain this spatial clustering. They formally test hypotheses about the correlates of spatial concentration of sexual assaults. Covariates include both macro-level characteristics, such as racial composition, age structure, poverty, and micro-level characteristics, such as location of bars, homeless shelters, or hotels. Local Moran statistics are used to determine whether the local dependencies in sexual assault are spatially congruent with the local dependencies in these covariates. By using exploratory spatial analyses, researchers develop a much more nuanced understanding of sexual assault.

Sharon E. Chamard **University of Alaska, Anchorage**

Sexual Assault Mobility Patterns

(Sharon E. Chamard, André B. Rosay)

Data on offender residence, victim residence, pick-up location, incident location, drop-off location, and report location were collected from sexual assault cases reported to the Anchorage Police Department from 2001 to 2004. This research examines these geocoded points with respect to mobility triangles and journey to crime. Of particular interest is the question of how far offenders and victims travel to the pick-up location, and the extent to which either party enters the "territory" of another prior to the encounter. Results are interpreted with respect to information value to law enforcement practices in the effort to lower sexual assault rates.

Saturday, September 10, 2005

7:30 am - 10:30 am **Registration** ***Pre-Function Area***

8:00 am - 9:30 am **Concurrent Panels**

Advanced Crime Mapping and Analysis II

Grand Ballroom E

Advanced

Moderator

Haifeng Zhang — **University of South Carolina**

Presenters

Gina Penly Hall — **State University of New York at Albany**

Offender Attributes and the Spatial Clustering of Crime Incidents: A Detailed Examination of Crime Hot Spots

(Gina Penly Hall, Alan J. Lizotte)

In recent years, the conceptual focus of ecological crime research has shifted away from explaining criminal motivations toward explaining crime incidents. Spatial analysis is concerned with where crimes occur and generally focuses on characteristics of the offense and location to explain why the spatial distribution of crime incidents is not random. The current study departs from these applications and uses official interview data from the Rochester Youth Development Study (RYDS), a longitudinal study of the causes and correlates of serious, violent, and chronic delinquency, to examine the role of offender characteristics in the spatial clustering of crime.

Sunghoon Roh — **Applachian State University**

Geographic Distribution of Calls for Service in Texas Suburbs

This study analyzes calls for service data in four suburban cities in Texas. At the macro level, social disorganization theory is tested by using spatial multiple regression (spatial lag model) methods in analysis. The test aims to examine whether more police calls are made in block groups that have higher poverty levels, more residential mobility, mixed racial groups, disruptive families, and higher population density. In the micro level, hot spots of calls for service are identified using the risk adjusted to the nearest neighborhood hierarchical clustering. Next, structural and community characteristics of hot spots are examined by agglomerative hierarchical cluster analysis.

Haifeng Zhang — **University of South Carolina**

Spatial Analysis of Crime in Urban Neighborhoods: Using Location Quotient and Density as Indicators

(Haifeng Zhang, Michael P. Piterson)

The spatial patterns of four predominant types of crime (assault, robbery, auto-theft, and

burglary) and their relationships with the selected 2000 U.S. Census socio-economic characteristics for the city of Omaha, Nebraska, were examined in this paper. The location quotient of crime (LQC) and density of crime were used as alternatives to crime rate for disclosing the relative specialization and intensity of different types of crime across Omaha's neighborhoods. Spatial regression model and multivariate visualization techniques were used to investigate and visualize the correlates of types of crime.

Crime Mapping Issues III

Grand Ballroom F

General Audience

Moderator

Rachel Boba — **Florida Atlantic University**

Presenters

John D. Markovic — **International Association of Chiefs of Police**

Mapping LEMAS Data: Potential for Exploring Geographic Patterns in Policing Approaches, Capacities, and Practices

(John D. Markovic, Matthew J. Hickman)

This presentation addresses the use of national data sets in examining geographic patterns across local law enforcement jurisdictions. Rather than the traditional approach of exploring patterns of crime or social disorder, this analysis examines geographic variations and trends in police practices. From an exploratory data analysis perspective, LEMAS data showing geographic variations in staffing patterns, operational capacities, technology use, and policy implementations, offers a series of illustrative maps for analysis. These illustrative maps primarily determine the existence of geographic "regimes" (identifiable regional patterns) across a variety of policing dimensions.

Spencer Chainey — **Jill Dando Institute of Crime Science**

Appliance of Science: Spiriting Crime Mapping With Crime Science

Crime Science is about applying a methodical, hypothesis-driven, and evidence-led approach to crime reduction. It aims to catch offenders more quickly and get upstream of the problems presented by crime, by working to prevent it in the first place. But how does Crime Science relate to crime mapping, and how does it fit in contemporary policing and crime reduction? This presentation describes the basis of Crime Science, how it complements the new paradigms in policing and crime reduction, and how it is spiriting new forms of spatial analysis and crime mapping. The presentation will also describe the profile it offers to crime analysis and risks that could prevent success.

Rachel Boba — **Florida Atlantic University**

Role of GIS in the Institutionalization of Analysis in Police Departments

This presentation is a discussion of a model for the institutionalization of analysis at all levels in a police agency. This includes the analysis of repeat incidents, patterns, and problems. The presentation focuses on the central role that GIS plays in this process and ends with a

discussion of the evaluation results for this model, as implemented in the Port St. Lucie, Florida, Police Department, with the assistance of a grant from the Office of Community Oriented Policing Services.

Geographic Profiling III (Journey-to-Crime) *Convention Center #203*

Intermediate

Moderator

Katharine Browning **National Institute of Justice**

Presenters

Safa F. Egilmez **Santa Monica Police Department**

Do You Expect to Recover Your Stolen Vehicles? If So, When and Where? An Empirical Study from the City of Santa Monica, California
(Safa F. Egilmez, Yifei Sun)
There is extensive research done on auto thefts regarding their location, time, and other factors. Different theories have been developed to explain the crime phenomena. A small body of literature has explored the issues related to journey-after-crime. This study examines the issue of time span for the recovery of stolen vehicles. Particularly, researchers want to explore how long it takes for certain models to get recovered, if they get recovered; the spatial distribution; the impacts of factors related to the vehicles, owner, site of the crime, the distance between the crime and the recovery site; and other factors.

Devon D. Brewer **Interdisciplinary Scientific Research**

Geographic Profiles of Violent Clients of Prostitute Women and Clients Overall
(Devon D. Brewer, Stephen Q. Muth, Jonathan A. Dudek, John J. Potterat, John M. Roberts, Jr.)
Prostitute women have the highest homicide victimization rate of any group of women ever studied. Violent crimes against prostitutes also have low clearance rates. However, cleared cases indicate that most perpetrators are prostitutes' clients. The study presents geographic profiles of violent clients and clients overall based on patronizing arrest data from eight states and three cities in the U.S. and other data on hundreds of violent clients. Researchers compare clients overall with adult men residing in the same areas and compare violent clients with clients overall on several spatial measures. The results may help guide investigations of violent crimes against prostitute women.

Lorie Velarde **Irvine Police Department**

Accuracy and Value of Geographic Profiling in an Operational Context
Geographic profiling is an investigative methodology that provides an optimal search strategy in cases of serial crime. The presenter has used geographic profiling for the past two years in several cases of unsolved serial property crime. Some of these cases have now been solved, allowing for the evaluation of profile accuracy and value. This presentation discusses how the assumptions and limitations of geographic profiling were addressed in the unsolved

cases in light of what is known now that they are solved. Counterbalance techniques that help optimize profile performance and the utilization of geoprofile results by investigators are also covered. Case examples with agency operational bulletins are presented.

Sex Offender Mapping

Convention Center #205

General Audience

Moderator

Angela M. Moore Parmley — **National Institute of Justice**

Presenters

Timothy M. Bray — **University of Texas at Dallas**

Child Safety Zone: Using GIS to Assess Public Policy Impact

Few areas of criminal justice policy garner as much attention as sex offender management policy. Of particular interest are those post-sentence policies designed to manage the offender population upon release to the public. The overall effectiveness of many such programs is judged anecdotally. This paper explores the impact of one proposed sex offender management measure, the creation of rigid Child Safety Zone in Texas. Focusing on schools and parks in Dallas County, Texas, this paper uses GIS to examine the extent to which the proposed zones might pose effects that are contrary to their intention.

Miriam Olivares — **Texas A&M University**

Sex Offenders and Critical Risk Zones

(Miriam Olivares, Praveen Maghelal)

Sex offenders are required to constantly notify their location. In Brazos County, Texas, the Child Safety Zone (CSZ) is restricted to 1,000 feet from the premises where children generally gather such as schools, day-care facilities, and parks. To maintain an effective vigilance of sexual offenders, the use of GIS to map offenders' locations is critical. This study has created a Web-based tool for law enforcement officers to locate offenders residing in, on, or within a CSZ in Brazos County, Texas. CSZs were created for each offender to show risk level and relevant locations that overlap.

Terry Sterling — **Pinellas County Sheriff's Office**

Sex Offender Mapping: Managing a Mobile Population

(Terry Sterling, Tim Burns)

Sex offender management has become a complex process, guided by both public opinion and statutory requirements. Many local agencies across the country struggle with the issues of placement of offenders and notification of citizens in communities. Pinellas County, Florida, has successfully developed automated solutions to this management problem through the Enforcer Project. Through the use of an enterprise geographic information system, agency data partnerships, and Web-based mapping applications, local agencies have been better able to adhere to state statutes and enhance public safety, while saving valuable time and resources.

Terrorism

Grand Ballroom D

General Audience

Moderator

Jason Dalton — **Spatial Data Analytics Corporation**

Presenters

Mark A. Stallo — **Dallas Police Department**

Using GIS to Manage Critical Infrastructure in an Urban Setting

(Mark A. Stallo, Michael Beattie, Luke Lawrence)

The presentation will cover a number of methods for categorizing and collecting an inventory on various types of facilities. Some examples include airports, hospitals, defense contractors establishments, city facilities, schools. The methods used for creating this inventory range from MS PowerPoint to ArcView and ArcGIS. This presentation shows the methods used for collecting the data as well as ways to make it available to first responders. There will be a discussion of using the information in the event of a natural disaster. Procedures for collecting and updating information will also be discussed. The culmination of the presentation is a demonstration of how an average person could access this data to provide good, timely information to police and fire personnel (first responders).

Brent L. Smith — **University of Arkansas**

Pre-Incident Indicators of Terrorist Group Activities in America: Spatial and Temporal Patterns

(Brent L. Smith, Kelly R. Damphousse, Paxton Roberts)

Although some general spatial and temporal patterns of traditional criminality have been identified in this research, the lack of openly available data about terrorist group planning has precluded identification of even the most rudimentary patterns. This analysis includes data on time and distance between places and events involving recruitment, preparatory meetings, preparatory crimes, and actual or planned terrorist events. The analysis involves approximately 75 case studies categorized by type of terrorist organization.

Jason Dalton — **Spatial Data Analytics Corporation**

Spatio-Temporal Forecast Model for Terrorist Events

There have been considerable leaps in spatial modeling in the last decade. In addition to the statistical techniques and simulation methods, there is the realization that spatial data viewed only in the space of geographic coordinates is far less useful than the same data marked with important feature and environmental data calculated through the use of GIS. In previous work, the effectiveness of taking an environmental feature space view of events that occur in the complex space of urban environments was demonstrated. Here, this idea is extended to the temporal dimension to provide forecasting methods for very heterogeneous event spaces, such as crime and terrorist events. The current work demonstrates effectiveness in forecasting in space but in time as well, refining the method considerably. The feature space spatial forecast model is a density estimation technique that uses empirical data to train a spatiotemporal model that can then be projected onto one or several windows of space and

time. In prior work, researchers have demonstrated that this projection accurately estimates the density of event points that have not yet been observed. This method has been useful in translation of a particular type of threat from one physical area into another, demonstrating that spatial feature preference models are transferable between geographic spaces.

Traffic Safety

Convention Center #204

General Audience

Moderator

Kaan M.A. Ozbay — **Rutgers University**

Presenters

Robert Gamble — **Greenville Police Department**

Mapping and Analysis of Traffic Collisions Using GIS

This presentation showcases a project using GIS to map traffic collisions. Officers use a custom software program on their Mobile Data Terminals (MDT) to map and determine the State Plane coordinates of each collision. This information is entered into a computer database and analyzed using ESRI ArcView and Spatial Analyst. This application has proven to be a cost-effective and user-friendly approach to mapping collision data.

Ned Levine — **Ned Levine & Associates**

Using GIS and Spatial Analysis for Traffic Safety Planning: Houston Metropolitan Traffic Safety Program

The presentation describes a traffic safety-planning program in the Houston metropolitan region. Using a GIS-based crash information system and spatial analysis, a range of safety applications have been developed including hot spot mitigation, corridor analysis, long-range planning, and safety education. Safety hot spot identification is used for defining short-and long-term mitigation projects, involving a benefit-cost analysis that follows Federal guidelines. Corridor safety analysis is used for roadway and transit expansion planning. Major safety hot spots are identified for long-range construction projects. Safety education guides partnerships with local governments and a public outreach effort. Safety planning courses have been planned for traffic engineers and public officials, and a Regional Safety Council is being developed.

Kaan M.A. Ozbay — **Rutgers University**

Hierarchical Risk Mapping in Transportation

(Kaan M.A. Ozbay, Nebahat Noyan)

Maps of regional risk rates are useful tools in determining spatial patterns of transportation accidents. Accident attributes, combined with roadway characteristics permit assessment of risk mapping over a transportation area of interest; that is, whether certain regions experience high-risk accidents in small numbers or low-risk accidents in large numbers. The project uses a parametric approach for spatio-temporal patterns of risk due to accidents, adding random effects and heterogeneity in the model. Bayesian inference proposed in this paper proceeds according to a Bayesian hierarchical paradigm and is implemented using Markov

Chain Monte Carlo (MCMC) in WINBUGS. The spatial characterization of effects across regions of interest in a transportation network offers the potential to identify factors that could influence the definition of "risk," and offers insights to mechanisms of accident occurrences and their attribution to "risk rates."

Visualization

Convention Center #202

Intermediate

Moderator

Fraser Moffatt — **Canada Border Services Agency**

Presenters

Ian Oldfield — **Metropolitan Police Service**

Visualization and Interpretation of Crime Maps

This paper explores the numerous visualization and analytical techniques used within the field of crime mapping and assesses the output from a usability point of view. It is illustrated with examples from existing analysis used both within the police service and the academic community. The discussion includes the strengths and weaknesses of various techniques and products and helps to highlight those that are worth further exploration and others that demonstrate weaknesses and the danger of inference based on flawed methodologies. Analysts and academics will benefit from the discussion of what works now and what might provide opportunities for further academic exploration.

Tim Petersen — **Tuscon Police Department**

Visualization and Analysis for Law Enforcement

(Tim Petersen, Homa Atabakhsh, Hsinchun Chen, Chunju Tseng, Siddharth Kaza, Byron Marshall, Shauna Eggers, Ankit Shah, Hemanth Gowda, Charles Violette)

Crime-mapping techniques have proven to be critical in helping to pursue crime analysis. By interviewing crime analysts at the Tucson Police Department, researchers found that temporal and conceptual spatial attributes also play important roles in solving crimes. The project developed two separate systems that provide automatic assistance to visualize these attributes. Spatial Temporal Visualization system is designed to map both spatial and temporal dimensions of the incidents for crime pattern identification. The Criminal Activities Network system extracts, visualizes, and analyzes criminal relationships onto a conceptual space to discover criminal associations. This presentation discusses the design and functionality of these two systems and the lessons learned.

Fraser Moffatt — **Canada Border Services Agency**

Geovisualization of Opportunity: Mapping the Crime Triangle

The integration of maps with knowledge discovery from large databases has long been an implicit goal of the crime mapping discipline and proves to be persistently elusive. The current state of the art and science of crime mapping is a subset of digital cartography. As such, the research agenda proposed by the International Cartographic Association (ICA) in the area of knowledge discovery in large databases and geovisualization is very relevant to

this field. Taking the lead from the research agenda set forth by the ICA Commission on Visualization, this presentation introduces the concepts of geovisualization, knowledge discovery, and geocomputation in the context of mapping the opportunity for crime. Public policy implications will also be discussed.

9:30 am - 10:00 am **Break**

10:00 am - 11:30 am **Workshops**

Analyzing Traffic Hot Spots

Convention Center #202

Intermediate

Presenter

Christopher W. Bruce **Danvers Police Department**

Analyzing Traffic Accident Hot Spots

Although most crime analysts focus, as their title suggests, on crime, the techniques and technologies used in crime mapping and analysis are well-suited to analyze and quell traffic accident hot spots, a public safety issue that results in as much trauma, suffering, fear, and property loss as crime. This session introduces students to the unique challenges presented by traffic accident analysis: how to accurately map incidents that occur at very discrete locations, how to normalize accident volume by traffic volume, how to recognize which types of thematic maps best convey accident hot spots, and how to develop strategies to address specific accident causes.

Building an Analysis Unit With GIS as the Foundation

Convention Center #204

General Audience

Presenter

Matthew White **Jacksonville Sheriff's Office**

Building an Analysis Unit With GIS as the Foundation

The purpose of this workshop is to expose managers or command staff to a different way of building an analytical unit. The workshop will be based on the design implemented in the Crime Analysis Unit of the Jacksonville, Florida, Sheriff's Office. The re-structuring of the Unit drastically improved the breadth of the unit's capabilities, while at the same time increasing the speed and flexibility with which products can be produced and analyzed. The workshop will convey the vision by showing the real world advantages to building an Analysis Unit using a GIS foundation.

Census Applications in Crime Analysis

Convention Center #205

General Audience

Presenter

Keith Harries — **University of Maryland, Baltimore County**

Census Applications in Crime Analysis

Crime varies with social and economic conditions. The U.S. Census of Population and Housing offers the most comprehensive free resource that permits the preparation of thematic maps and statistical reports for areas as small as Block Groups, with a population of about 1000. This workshop will explain how to access census data and use it to answer questions about local conditions relevant to crime.

Getting Started With Geospatial Repository for Analysis and Safety Planning (GRASP)

Convention Center #203

Intermediate

Presenter

Patrick Hansen — **University of Virginia**

Getting Started With GRASP

Geospatial Repository for Analysis and Safety Planning (GRASP) is a web application that serves as an online spatial data repository. It uses geographic information system (GIS) technology to facilitate data sharing among law enforcement agencies. The system provides verified users the ability to view and share spatial data over the Internet in a secure environment. This workshop will provide an introduction to GIS data structures, GRASP components and functionality, and installation procedures of GRASP.

How to Create and Use Spider Diagrams for Crime Hot Spot Analysis

Grand Ballroom D

Intermediate

Presenter

Douglas Hicks — **Minneapolis Police Department**

How to Create and Use Spider Diagrams for Crime Hot Spot Analysis

Spider Diagrams are composed of radiating lines from a central location (crime hot spot area) to multiple points (residences of people arrested in the hot spot). The diagrams and associated spatial statistics are very useful for problem area analysis and crime reduction strategy development. They can dramatically illustrate the relationships between high crime locations and offender residences. Examples from Minneapolis, Minnesota, will illustrate the variety and benefits. This workshop will give attendees complete, easy-to-follow, step-by-step instructions for Spider Diagram construction and spatial analysis utilization so they can recreate the process using their own data and crime problems.

Maximizing Your Mapping Impact With Effective Use of Color and Presentation Skills

Grand Ballroom E

General Audience

Presenter

Jerry Ratcliffe **Temple University**

Maximizing Your Mapping Impact With Effective Use of Color and Presentation Skills

Many spatial crime analysts spend weeks working on a project only to see their efforts wasted through mediocre maps or poor presentations. This session guides crime mappers, who might not have taken a cartography or presentation skills class, in two ways. The first half explores how people see and perceive color and how this understanding can improve the clarity and impact of maps and graphics. The second half explains how to convey text and graphical information in a briefing, using MS PowerPoint, with some simple guidelines. It finishes up with a concise guide to standing up and presenting.

Thematic Mapping Principles

Grand Ballroom F

Intermediate

Presenter

Ronald E. Wilson **MAPS Program**

Thematic Mapping Principles

This workshop will address three of the five major themes in thematic mapping: (1) definitions of each classification scheme, (2) advantages and disadvantages of each scheme, and (3) "when" and "when not to" use each scheme and which scheme is most or least appropriate, based on the underlying data distribution.